



Sierra Vista City Council
Work Session Agenda
September 20, 2016

1. Call to order – 3:00 p.m. in the City Hall, Council Chambers, 1011 N. Coronado Drive, Sierra Vista, Arizona.
2. Presentation and discussion:
 - A. September 22, 2016 Council Meeting Agenda Items (agenda attached)
 - B. Presentation by University of Arizona South on Cyber Program
 - C. Review of Public Art Mural Project on West End
 - D. City's new web site tour
 - E. Report on Recent Trips, Meetings and Future Meetings
 - F. Future Discussion Items and Council Requests
3. Adjourn

City Council work sessions are informal meetings of the elected body designed to allow the Mayor and Council Members to prepare for upcoming regular meetings, have staff briefings on issues, and provide an opportunity for more detailed discussions amongst themselves. The meetings are limited by City Ordinance to 90 minutes; but with Council consensus may be extended by an additional hour. The meetings are set in accordance with the State Open Meeting Law and no discussion can take place on issues/topics that have not been posted on the agenda at least 24 hours in advance. The public is welcome to observe the meetings in person or on Cox Channel 12, but time is not reserved on work session agendas for public comment. The public may, however, address the City Council at their regular twice monthly meetings or share written views through the City website, www.SierraVistaAZ.gov.

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September 20, 2016

1. Call to order by Mayor Mueller at 3:00 p.m. in the City Hall, Council Chambers at 1011 N. Coronado Drive, Sierra Vista, Arizona.

Roll Call

Mayor Rick Mueller – present
Mayor Pro Tem Bob Blanchard – present
Council Member Alesia Ash – present
Council Member Gwen Calhoun – present
Council Member Rachel Gray – present
Council Member Hank Huisking – present
Council Member Craig Mount – present

Others Present:

Chuck Potucek, City Manager
Mary Jacobs, Assistant City Manager
Ron York, Fire Chief
Adam Thrasher, Police Chief
Sharon Flissar, Public Works Director
Victoria Yarbrough, Library and Leisure Services Director
Matt McLachlan, Community Development Director
Jeff Pregler, Planner
Jenifer Thornton, Management Analyst
Simone McFarland, Economic Development Manager
Judy Hector, PIO
Linda Jones, Management Analyst
Abe Rubio, IT Manager
Dr. James Shockey, U of A

2. Presentation and discussion:

- A. September 22, 2016 Council Meeting Agenda Items (agenda attached)

Mayor Mueller announced that there will be a number of presentations and awards.

Council Member Mount asked about costs and if North Star was involved with the application process for the Savvy and Silver Circle Awards. Ms. Hector explained that City staff applied to the national competition and not North Star. Staff submitted the materials and responded to the questionnaire; however, there were supply costs as well as an application cost. She also clarified that Ms. McFarland assisted with the economic development video.

Further discussion ensued amongst Council Members Calhoun and Mount with regard to the application fee and North Star, a sponsor to the organization that made the selection.

Ms. Jacobs explained that sometimes there is application fees associated with an award and it depends on the organization that is sponsoring the award. Mr. Potucek added that it has been the City's practice to pursue awards to bring attention to Sierra Vista.

Council Member Mount stated that the concerns he had are not an issue as the Division's team put the paperwork together. He noted that he has stated it before and he will stay consistent with his message that he has a big issue when it comes down to a conflict of interest regardless of the dollar amount. He further noted that in going through the web site, he noticed the fee associated with entering the competition; but it also stated that the consultant who put together all of the material is also eligible to put it forward. The consultant that the City used was a key sponsor for the organization and he wanted to make sure that there was no conflict of interest.

Item 2 Resolution 2016-076, application for a new license, Series 12, Individual-type of ownership for Oleg Ivanovich Murashka for Z's Steakhouse, 3637 S. Highway 92, Sierra Vista, Arizona

Ms. Marsh stated that Oleg Murashka is opening up Z's Restaurant where Melinda's used to be with a new liquor license, which has been posted, reviewed by the Police Department and recommended for approval.

Council Member Huisking asked how long it would take for Mr. Murashka to obtain the license. Ms. Marsh stated that it is in the works as Council's recommendation of approval or denial will be sent to the Liquor Board and upon their review, they will either approve it or deny it.

Council Member Huisking stated that it was relayed to her by the owner that the City had stated that it would take six months and if it took that long, he would be unable to open on November 4th. Ms. Marsh stated that it does not take six months. The application is first sent to the Liquor Board, which they then send to Council for a recommendation of approval or denial. It is then sent back to Liquor Board for final action; but it has to be posted for a minimum of 20 days before any action by the City.

Mayor Mueller stated that it might have been miscommunication because the problematic applications have taken up to six months. Once the application comes down, Council reviews it and once passed it comes to him for his signature with a check attached and it leaves the City's office the same day or the next back to the Liquor Board. The City's involvement to speed up the process is very small.

Council Member Huisking asked if there is a reason for the City to drag it out. Mayor Mueller stated that there is no motivation.

Item 3 Resolution 2016-077, Opening a Public Hearing and Approving the Submission of the US Housing and Urban Development (HUD) Consolidated Annual Performance Evaluation Report (CAPER) for the CDBG Program Years 1 (2014 funding) and 2 (2015 funding)

Mr. McLachlan stated that as part of the City's Community Development Block Grant Program, the City must report on accomplishment and progress toward Consolidated Plan goals in the Consolidated Annual Performance and Evaluation Report (CAPR). The CAPR requirements ensure that entities completed their approved projects or programs in a manner that is timely and appropriate. The reporting cycle is July 1 through June 30 of each year. The City has two CAPRs this year addressing programs years one and two for funding awards from 2014/2015. The City is required to hold a public meeting on the CAPR Reports following a minimum required 15 day review period. The required notice has been provided in the local newspaper and the documents are available for public inspection on the City's web site, Library and the Community Development Department. Staff is requesting that Council approve the CAPR to

submit to Housing and Urban Development (HUD), which must be done prior to the end of the month.

Mr. McLachlan stated that this is a status report on projects that have been undertaken for each program year's funding.

Council Member Huisking asked who put together the background report. Mr. McLachlan stated that Ms. Thornton prepared the report.

Council Member Calhoun asked if Habitat will still be receiving funds for emergency repair of homes. Mr. McLachlan stated that the summit is not part of the agenda item before Council; but the Annual Action Plan does recommend \$60,000 be devoted to emergency home repairs to be carried out by Habitat. The reporting requirement for this year's funding is next year. Before Council is Program Year 2014/2015.

Council Member Mount asked Council Member Calhoun if she has concerns with Habitat receiving funding. Council Member Calhoun stated that not at all.

Council Member Huisking asked if it is normal in a community for 50 percent of its residents to own homes with the other 50 percent renting homes. Mr. McLachlan stated that home ownership has gone down nationally and the City is at about 2/3. When lending was more available, it was much higher at about 80 percent. In the City there are other factors that impact the tenure of housing, most notably are the contract positions that are more transient. There are local factors that play into that figure and he would have to look at the historical average over the years to see how it compares and if there is a trend in decline of home ownership.

Council Member Huisking asked if it makes it harder for the community to maintain aesthetics, appearance and quality because of high rental rate. Mr. McLachlan stated that generally there is more pride of ownership in owner-occupied neighborhoods; but he has not looked at it in depth to see if that is a factor in the City.

Council Member Huisking noted that all of the efforts being made to try to keep and maintain properties are especially helpful in the community and environment. Mr. McLachlan stated that he does not know how that rate compares to the historical average and if it is lower.

Item 4 Resolution 2016-078, Modification Agreement and Estoppel Certificate related to Coronado Commons Subdivision Development Agreement

Mr. McLachlan stated that the owners of Coronado Commons, residential development located directly across the street from City Hall, are in the process of refinancing their existing loan with Key Bank that is to be ensured by the US Department of Urban and Housing Development (HUD). The property is subject to a development agreement that for the most part has been implemented; however, the development agreement contains certain variances and user restrictions that need to remain in place and therefore, the Department is not recommending its termination. As a predicate to funding, the owners are requesting that the development agreement be modified to carve out HUD from two provisions that obligate the owner of the property to indemnify the City or pay certain legal expenses, which would violate the Ant deficiency Act as stated in the letter from the attorney representing Key Bank.

The proposed modification was reviewed by the City Attorney and found to be acceptable. In addition, the owners requested that the City sign an Estoppel Certificate verifying that the subdivision is consistent with the development agreement conditions.

Mr. McLachlan stated that staff is recommending approval and explained that there is a conflict with the assigns and HUD being party to the development agreement in the sense that they carry any obligation to indemnify the City or take on any legal obligation.

Mr. Potucek added that the key thing for the City in all this is that the requirements of the development agreement in terms of the infrastructure and everything provided have been met. The other issues are legal issues that the developer needs to clear up in order to obtain the refinancing for the subdivision.

Council Member Calhoun asked who is responsible as the original agreement stated that it is to go on forever and that the HOA was going to take on the responsibility of maintaining the things that the City requested in the original agreement. Mr. Potucek stated that those provisions remain in place according to the development agreement. The City still has responsibilities in terms of enforcement and they do as well based on what they agreed to.

Item 5 Resolution 2016-079, Intergovernmental Agreement with Cochise County Community College District for a Joint Program to train Emergency Medical Services and Fire Science Students

Fire Chief York stated that this renewal of a long standing agreement with the College since the early 80's for EMT classes. This had to be changed because they have relocated their EMS Program from the Fire House to the downtown campus. The Department does not house any of the EMS equipment. The Department has equipment for teaching the Fire Science Courses at the Fire House. This is a renewal with a couple of changes stating that they are not at the Fire House.

Mayor Mueller indicated that it is a good program and thanked the Fire Department for providing the classes to the community.

Item 6 and Item 7 City Council Meeting Minutes of September 8 and Special Meeting Minutes of September 12, 2016 – There was no discussion.

Item 8 Resolution 2016-080, Reappointment of Larry Hampton to the Parks and Recreation Commission, said term to expire November 20, 2018 – There was no discussion.

B. Presentation by University of Arizona South on Cyber Program

Ms. McFarland introduced Dr. Shockey with the University of Arizona (U of A) who is working on a new cyber program. She added that when she first came on board, Dr. Shockey was the first person to reach out to her and in her mind he is one of her heroes as he has moved quickly and put a lot of assets towards moving the program forward. The Cyber Program will change the face of the City and it is very real.

Dr. Shockey thanked Council for the opportunity to speak and added that Ms. McFarland is correct in that the program being developed had humble roots. It started out as an idea that he had with a local defense contractor who brought seven people, two from Tucson and five locally to talk about the possibility of a program. He added that he met with Ms. McFarland to talk about the opportunities in Sierra Vista to develop a cyber-related field as something that

did not require a railroad, major highway and a whole lot of unique assets. It requires exactly what the City already has; access to smart, well educated people and Fort Huachuca with a lot of defense contractors and it is the perfect environment for it.

The U of A has gone well beyond a simple degree program. They are now receiving requests from people who want to see what is being done, i.e., one of the best known in the country running the Michigan Cyber Range, the Virginia Cyber Range and NSA. The U of A started with a simple curriculum built off of the requirements that NSA has for the development of a Center of Academic Excellence in Cyber Operations.

Cyber defense is one of the designations NSA has and there are over 200 schools in the country that have cyber defense designations and centers of academic excellence. Currently there are fifteen that are cyber operations.

The U of A is not trained to teach people how to hack into personal computers; but the philosophy is that they cannot defend anything well unless they know how to attack it. Therefore, the University is working towards training offensive and the military is thrilled about this. The courses are numerous and they are still being developed. There are course requirements that the U of A includes that are introductory in nature as well as the following: defensive, intrusion detection, malware and cyber threat intelligence.

Dr. Shockey stated that it was his dream in the beginning to have existing courses and plug them together in hopes that they would fit with what NSA is looking for; but it was clear that it was not the case. The U of A had to go out and hire people to make sure that what they were doing met the needs of the NSA because the school's bar is set high. This is not another degree program because it is going to be one of the 16 best in the country.

A slide with NSA's requirements ranging from low level programming, i.e., assembly language, cyber defense, discrete math, legal and ethical principles was presented so that those that are concerned that the U of A is training hackers for a fee can see that it is not the case. The University is training people to do things ethically within guidelines so that they understand the rules and why they are doing it.

Dr. Shockey explained that he and Jason Denno started out by looking at the requirements, determining the sub requirements for each piece of information that NSA was looking for and built a course around it, which is uncommon. He defined specific objectives for each week of the course learning outcome that ties readings, lectures and assignments to each one of those weekly assignments. The labs were built as a virtual environment that allows teaching courses on line in a very dangerous environment that is walled off the rest of the world. It allows 60 simultaneous log ons in a hypothetical cyber city.

A slide was shown regarding the scenario for one week in the hypothetical cyber city. It starts off with the water company/power company having its damn hacked into because someone is attempting to flood the town. In order to close that, the student has to get back into their own computer system, which someone else has hijacked and they now control. The student has to figure out how to get back into their own computer system, find their passwords, hack back into it and take control from them by working their way through all of their protections to close the damn and save the city. This requires intrusion detection, defense, password hacking and a lot of other skills. It is built into one lab in one week of one course and in an environment that does not touch the outside world.

Most institutions and companies have courses where the individual walks in with their laptop and during week one, they have to load a virtual machine onto their laptop. The architecture of the virtual infrastructure of the U of A has courses, servers and machines and rather than spending the entire first week of a course trying to get the software loaded, the U of A has everything in the Amazon Web Service's cloud. The student can log in with a phone, iPad and click into a virtual server that loads all of the software that they will need onto the virtual server and it does not need to be on their machine, which is safer. That environment connects to a number of virtual labs. Virtual labs include a forensic lab, a malware lab with its own server room and an internet of things lab. The internet of things lab will open up opportunities not just to teach students how to work with physical objects that are internet connected; but will give the City and its employers an opportunity to have manufacturers test and evaluate their equipment.

The building on campus will have two classrooms and a large conference room, which is the Networks Operation Center. The U of A will bring City Council, Washington dignitaries, the Department of Defense and State Legislatures in to show what is being done as well as the opportunities that they might have thought existed somewhere else.

The virtual desktop will load everything and if something goes wrong and malware destroys their virtual machine, the reset button can be pushed to allow the student to start over. The worst stuff on the planet can be tested; but it is simple to restart and it can't leak out. There will be a 3D graphical user interface that will show what is being sent to other machines so that if the information is infected, the student can hack or shut off the information being sent.

The hypothetical community that is currently named CyberApolis that was initially called CyberVista will have a power company and a water company that will have an organizational structure to it with seven people identified as critical when talking about forensics labs. There will be customer accounts and everything that a water company would have including down the road connections between the hypothetical water company's web site and real internet control systems that would connect the water stations, pumps and dams. The city will also have two news agencies, hospital to practice protecting health information, a large retailer and a social media site called Social Park. It will also have 15,000 people with real life digital footprints with Face book accounts and activity as well as twitter accounts and ways to hack into a system and protect things. It will look as real as it can possibly be made.

The virtual people in the system will have information stored that is usually asked when setting up a password. People will have credit card numbers that are not viable numbers; but have the characteristics to find for credit cards that make them appear to scanning devices as though they could be real credit card numbers so that the students can do everything with credit card accounts and driver's licenses in the hypothetical environment.

The Malware Sandbox is a place where the students can reverse engineer malware. The U of A is working with MIS' international data base that has hundreds of examples of malware for students to practice on. The Capture the Flag Arena allows students to do that in number of different levels, i.e., the Cyber Patriot in Sierra Vista, a great program within the high schools that is championed by Cochise College. Dr. Shockey stated that there were five community colleges at the U of A campus including Cochise and it is his hope that after everyone gets their own Cyber Center of Academic Excellence, that Capture the Flag can be at the five institutions in southern Arizona and that they can compete against one another for practice.

There will be three if not four Internet of things labs located at campus, Cochise College, Electrical and Engineering in Tucson and at MIS. The U of A already has two to three

manufactures interested in putting their internet connected equipment into the lab where the students can train on it. The University will put interns in charge of it and will pair the University's intern with Graduate students in Electrical and Engineering so that the company who provides the equipment can get real testing and an evaluation report that serves as a dual level internship for students on the main campus. Eventually, this will be done for a fee and will be a revenue generator and attract businesses.

Dr. Shockey talked about internet technology that people have in their houses that are used to monitor that can be hacked into and tell someone how to break into your home. The U of A is also encouraging people to hack into the University's system through a Honey Net Lab so that the students can watch the activity and explore their behavior. He also stated that he and Jason Denno are working on this and involved is the Department of Defense and the NSA. He has contacted the Governor's Office, the Arizona Commerce Authority as well as the Arizona Chamber of Commerce and the Phoenix Chamber of Commerce.

The program required approximately \$1.6 Million worth of investment and the University did not wait around for a national science foundation grant. The money was saved over the years with the idea that they were going to build a lab and it is expected to welcome employers in large numbers.

Mayor Mueller thanked him for the foresight in saving money for this because public money, particularly university money is hard to come by.

Council Member Mount stated that it is impressive and added that he is sure that his peers will echo similar statements. He then asked with regard to the length and type of degree. Dr. Shockey stated that it will be a Cyber Operations Concentration to the Bachelor of Applied Science because the University can cut at least a year off the creation of a degree program by putting it under a BAS Degree. It also transfers from community colleges, which have AAS degrees in the area and it is a natural transfer. He does see the University developing a Bachelors of Science similar to this over time and after this is up and running the possibility of a Masters Degree Program.

Council Member Mount noted that he has starting connecting the dots with Ms. McFarland, which is good and added that everything is about shaping the capture to get to the goal. He asked Ms. McFarland if discussions have taken place with the Defense Contractors or the contracting officers to find out if this type of a degree is acceptable in lieu of four/five years of military experience. Ms. McFarland stated that at the Defense Contractor's Quarterly Meeting Dr. Shockey and Jason Denno rolled out the program and the Defense Contractors are starting to understanding where the University is at and what they are doing; but the contracting officers have not yet been reached out to. The University has already gone to D.C. and talked about the program alongside the Michigan Range and the other ranges that are known to be top notch. The University is standing head to shoulders with a lot of those ranges as a lot of them do not have a curriculum to back up their ranges. She added that she foresees getting more notoriety and working with contracting officers to get the contract specs.

Council Member Mount stated that it is obviously the long pole in the tent because he is currently going through that right now in trying to find technical people and it is hard; but if he can hire them locally would be great. The document has to say that these people are qualified and it is possible and asked when the work would start. Ms. McFarland stated that the key will be to get the NSA accreditation and once that happens everyone will understand what NSA accreditation means, an easier way to get there.

Dr. Shockey stated that the University has been working with contractors, NETCOM and whoever will talk to them for the past year and a half. The typical way that universities operate is to offer degree programs and people walk out with pieces of paper that state that they have graduated that meant something 20 years ago; but at this point everyone questions whether or not people get an education from that and request certifications. The University's goal is to get someone out with a meaningful degree and is working on creating a pathway towards certifications so that more teaching can continue. Students will be able to get in free for the cost of the exam and will be able to get the certification along with the degree. The fundamental part of an internship that is being built could last up to a year where they work in one of the malware labs or internet of things lab on a contractor-based project. The graduate students can test a piece of equipment, evaluate it and write reports for the employer and the student will walk out with technical skills or hired.

Council Member Mount asked if the course requires a security background or a CISP background. Dr. Shockey stated that the program can be started from scratch and it helps to have the background; but there is no real requirement. In order to be designated as a Center of Academic Excellence by the NSA the U of A is accrediting their program and not accrediting the pathway that goes from Cochise College to the University because students transfer from other colleges and universities and it cannot be assumed that every community college has the same curriculum. It is also safer for the University to assume that everything that they take from the U of A is what the NSA needs and this was built knowing specifically what the AAS Program is at Cochise College.

Ms. McFarland added that there is movement of foot at the Associate Defense Communities to allow military to use some of the educational credits to get the certificates and that is a sign that in the future they will accept those for job criteria. The U of A needs help with internships and the University has made it affordable as it is less than 20 hours per week for a student at approximately \$10 per hour. There are concerns about security clearances and the University could use help from the community and businesses.

Council Member Calhoun thanked Dr. Shockey for his presentation and stated that she learned a lot and asked if the community needs to do anything towards infrastructure needs. Dr. Shockey stated that nine months ago, he would have said yes because at the time he did not imagine the virtual learning environment. Somewhere down the road, if the program becomes popular, the University is going to have more than 60 simultaneously long ons to the system and the malware lab that will go on campus and other components, which will be connected to the campus and put on a separate band width off the University's system.

Dr. Shockey further explained that the reason as to why he did not want to take the Arizona Cyber Warfare Range in the Phoenix Metro Area was because he did not want that on his campus because they can't prove to him that it is secure and could compromise the University Network. He added that he has convinced Ms. McFarland and Cochise College of that; but if the University is going to have its own malware lab, then he wants to have a separate band width. However, he does not know what it takes to get a connection to campus and that is the remaining roadblock. The University is working together with the Fort, Defense Contractors and anyone that wants to be a part of the program to develop a team effort to make Sierra Vista the best place for this and potentially in the country. The educational component came first and rather than let that drag out for two years, the University invested in it and now it is time to make sure to get all of the other pieces together.

Mayor Mueller noted that if the University is talking about physical locations, the University South Foundation had already come on line and stated that they would help when they are

ready to grow, another charity private organization that can actually help when the time is appropriate.

Council Member Huisking asked where the funding would come from if the program needs to grow. Dr. Shockey stated that while working on developing the program and simultaneously figuring out how to get recognition from the NSA, Department of Home Land Security and others, the University has looked for grant opportunities, i.e., National Science Foundation and Title III Developing Hispanic-serving Institution Grants that allow building infrastructure. There are scholarships that come out of the NSA's Center of Academic Excellence and if the University gets in, then those funds can help build infrastructure by professional development for instructors, professors and students. They also have the world's best internship that pays the way for an entire summer to work on their campus in Maryland and they also pay for the security clearance.

Council Member Calhoun asked if the program can be done part time. Dr. Shockey stated that it can be done part time and it is fully available on line with others that are live and can be taken by anybody and anywhere. The University will compete with all of the prime online degrees around the country, most of whom do not have NSA status, and expects to have large enrollment. If the student is practical, it is better to try to do this fast because at the other end of it are jobs that are paying into mid upper six figures.

Council Member Ash asked about the certifications as some are valued more and required rather than the actual degree. Dr. Shockey stated that once this program is fully rolled out, there will be courses that they will have not have taught yet and that is the challenge with NSA as they have to prove that the courses work. The University will be offering contractors and NETCOM personnel an opportunity to take up to five courses for free as they have to be piloted in the spring in order to get NSA's status. In terms of the program, he believes that once everything is rolled out, the degree will be valuable and its depth will be seen and people will respect the students who get out of the program. There is nothing else like it in neither the country nor an environment like it and they are coming to see what the University has.

Council Member Ash noted that a lot of students go off to Tucson and this is an excellent opportunity to showcase something that is unique in Sierra Vista to retain more students, even if it is just one from the education feeding into the employment pipeline. Dr. Shockey stated that it is his mindset as he has sat for years on committees and groups trying to get everybody working in that direction. This is one example where the pipeline was developed. The Talent Pipeline had its program developed out of a logistics and the supply chain model from an educational standpoint that was handed to him in draft from people at the Arizona Chamber and Governor's office. They are thrilled that the University is doing this and that is one of the reasons that they are interested in it because the University dared to start with industry and developed it all of the way from middle school, high school, community college to the university and to the employer. This is what the community needed and Sierra Vista is way out in front.

Ms. McFarland stated that the next step for the City is to promote it and a marketing consultant has been hired. Articles are being written to be placed in various magazines to bring more notoriety to Sierra Vista. Next month is Cyber Security Month nationally so it provides a great platform to start pushing this forward.

Ms. McFarland added that this is what she talked about two years ago and now Council can see that it is actually coming to fruition. The big picture was presented to Council about developing the workforce, research, development and jobs. This is the workforce section and it

is running. The research is coming as Dr. Shockey alluded to a lot of the research that is occurring. The Defense and Security Research Institute at the U of A has been to the campus and they want to work with the University so that is starting to move forward. Next are the jobs and if the City has the workforce and the research and the money is flowing in through the grant and that transfer is happening out of the University, then the jobs and business will be in the City.

Mayor Mueller thanked Ms. McFarland and noted that she has done a good job.

C. Review of Public Art Mural Project on West End

Ms. Yarbrough stated that throughout the planning process for the Sierra Vista and Action Day, discussion took place with Mr. McLachlan for a public art project during the day. It was decided to seek a mural to be painted on the west end on the southeast facing wall of the Century Link Building at the corner of Fry Boulevard and Buffalo Soldier Trail (not the long side of the building that faces Fry Boulevard). The Arts & Humanities Commission was approached and was asked to manage a contest for the design. The contest was launched in the beginning of July, ran approximately six weeks and wrapped up the second week of August. There were about 30 entries submitted primarily from Sierra Vista with one as far away as the country of Lebanon. The Commission selected Joanne Berry who is a local artist and owns Blue Mustard Seeds Studio, an art school. Ms. Berry integrated the theme inspired by the City's brand and was able to incorporate in it what makes Sierra Vista and the region inspired by a quilt that she had seen. Ms. Berry will paint the mural for the City and staff will work through the Procurement Process.

Council Member Calhoun stated that it is a beautiful, colorful drawing and it represents so much of what is important to the City. She added that she loves the Gamble Quail; however, the hummingbird is missing. The City has been known for many years as the Humming Bird Capital and they are a part of the City's extraordinary skies. She also noted that the place where the mural is going to be will impress people driving by and it will bring a smile to her face. In closing, she thanked Ms. Berry.

Council Member Huisking stated that she really loves the design, humming bird or not. She voiced her concern with regard to the wall selection as drivers will be distracted going down Highway 90 in trying to look at it. She suggested the other side of the wall as drivers would be stopped at the stop light, waiting to go into the front gate and would be able to look at it. She also thanked Ms. Berry.

Mayor Muller noted that the mural is going on a private commercial building and asked if permission was obtained. Ms. Yarbrough stated that Mr. McLachlan is working through the contract with Century Link and there will be a legal document for permission to put the mural on their building.

Mayor Mueller asked if it includes future maintenance. Mr. McLachlan stated that a copy of the contract will be provided to Council; but it does obligate the City to maintain the mural.

Mayor Mueller also asked if this side of the building was what was offered rather than the south side. Ms. Yarbrough stated that it was primarily a financial based decision as she found the money for the mural out of a donation fund that was previously dedicated to the Art Discovery Series. Staff has an idea of what a mural would cost on the long side of the building and it is much more expensive.

Mayor Mueller asked if Council had any objections to proceeding with the mural. Council Member Mount asked if it is as is. Mayor Mueller stated that it will include the humming bird. It was the consensus of Council to proceed. Ms. Berry stated that she would add the humming bird at no charge. She also stated that it was an honor to be selected and thanked Council and the Arts and Humanities Commission.

D. City's new web site tour

Ms. Hector presented some of the highlights of the new web site and stated that it is based on the same platform as the Economic Development Web site, which was intentional so that down the road the City has a complete family of web sites with Economic Development, Municipal Government and later the Tourism Web site, VisitSierraVista.com.

This is a responsive design and it will look unusual from screen to screen but it will respond down to a cell phone size all the way up to a very large monitor. Staff is finding that nearly half of all of the viewers are accessing the web site on a mobile device, with 35 percent accessing it via a mobile phone.

The Home Page has a list of upcoming events and this is a feed from the calendar. The City News is also a feed of all of the press releases that are put out with the most current one at the top of the list. They can be accessed as an archive as well.

The At a Glance Column is a blog post where things that call for the public's attention can be posted, i.e., National Night Out or the Code of Ordinances to make it easier to find. Any of these can be made sticky and that means that they will stay at the top of the list so anything else added will be second.

The video is also on the Home Page. The Home Page provides flexibility to change any and all of those elements when it is an appropriate time to do so.

The Main Menu is comprised of Home, Government with things specific to City Council and the operations of the government. The City departments are all listed with fly out menus for different operations within those departments or divisions.

The Doing Business is essentially the Economic Development Web Site that links right to that web site from the City's web site. It is a seamless visual transition because they are built on the same platform.

The Municipal and Economic Development calendars have been combined to make it easier for people when searching for events.

The Visit Information will eventually point to a new web site that has the same look and feel as the City's web site.

The I Want To Menu are things that people contact City Hall on a regular basis wanting to apply for a job, pay some of their bills. These link right into the MUNIS System as well the HR System linking right into NeoGov, which is a seamless way and is an embedded window.

The directory lists all of the departments, individuals within the departments and it has been divided out by the divisions and departments; but it is not complete. Council Members have their information and their biography.

Council Member Huisking noted that the web site does not contain any biographies. Ms. Hector stated that Council Members Ash and Mount are uploaded; but she will look into it.

Council Member Mount stated that one of the things that he uses quite a bit and he cannot find any longer is the Document Center. Ms. Hector stated a Document Server was created and it is a specific server that staff members can upload things on to. There is a link from a page within the City's web site and the URL is Doc.Serve.SierraVistaaz.gov.

Council Member Gray asked if people can get to it from the regular web site. Ms. Hector explained that there are links from specific pages, i.e., Council Member Meeting and it would state, "for an agenda click here" that will take you there. This is searchable and it will come up on an internet search. All of the information is public information in an effort to be transparent. She added that she could probably add a link to the Document Server.

Council Member Mount stated that previously there was 10 years worth of data and asked if it is all still available. Ms. Hector stated that it is available through a public records request and it is not required to be available on the web site. The decision was not made by her; but the decision was made that it would be made available upon public request. The Division is trying to keep things streamlined and fast and having a lot of extra data is going to slow things down.

Council Member Mount stated that it is not his opinion of how the server could work. Mr. Potucek stated that the data is available through a public records request. All of the data is not being put on the web site.

Ms. Hector displayed the calendar which displays all of the upcoming events and searchable by topic, event category, the organizer and date. It is extremely user-friendly and the view can be changed by list or month. Hovering over it will display more information about an event.

Council Member Huisking asked if all of the lettering is light. Ms. Hector explained that the template is gray and the monitor in Chambers along with the overhead lighting make the display light; but staff can probably go in and change it.

Council Member Calhoun asked if other events other than the City's event can be included on the calendar. Ms. Hector stated that others can put their events on the calendar and it is encouraged because it is hoped that this becomes a true community calendar. It does go through a vetting process through her office to make sure that nothing is being put up that should not be. There has been some discussion in the economic realm that people want to plan events; but they don't know what is going on because there are so many calendars. In an effort to streamline, the Division is making an effort to get those things on there and encouraging others to add their events onto the City's calendar.

Mayor Mueller asked if the City is linked to other organizations, i.e., VICAP that are looking for volunteers. Ms. Hector stated that the site does not have other volunteer opportunities at this point as they are strictly City's volunteer opportunities.

Mayor Mueller suggested that groups, i.e., VICAP have their own web site and could be linked to the City's web site to look at all volunteer opportunities. Volunteers within the City are important and the City should be able to link to other organizations, a service that should probably be provided. Ms. Hector stated that it is doable and the platform is flexible and allows for the addition of things as needed.

Council Member Huisking stated that she votes for darker fonts. Council Member Calhoun agreed. Council Member Mount added that if the site is flexible then he would like to have the previous agendas, minutes and etc. be put back on so that a person does not have to request staff time to do a search of stuff that was already there. He further stated that he uses it a lot when he is doing his own research; but he does not understand why it was taken off. Mayor Mueller stated that maybe that is something that needs to be done in the Council's file. Mr. Potucek stated that he does not think that it was being accessed that much.

Ms. Marsh stated that Ms. Adams spoke to the City Attorney and the City is complying with the law in only keeping what is needed to post a notice and as a courtesy two years are being kept up on the web site. The rest can be requested through a public records request and the City Clerk's Office has all of those records. Mayor Mueller stated that he is not talking public requests; he is talking about a council member or a department head that needs additional information. They should be able to go internally through the Reading Room or whatever else to be able to conduct research. Mr. Potucek stated that staff would look into it.

Council Member Mount stated that what is legal is not what is always right. Mayor Mueller stated that it does not necessarily meet all of the needs.

Council Member Ash stated that she loves the web site as it is much better than the last one and is more modern that keeps the City from looking like it is falling behind. She asked if the web site has the ability to allow the paying of bills on line and registering for classes through the Library and etc. Ms. Hector stated that those options are available under I Want To. The Division is working on adding some other opportunities but they need to work with IT and Finance.

Council Member Ash added that it is great that as a general policy the City is allocating enough resources, funding and etc. to make sure that the City is up to date because it is becoming the expectation.

Council Member Huisking asked how someone can report a problem. Ms. Hector stated that there is a link that says email and it goes to her, staff and IT – the folks in charge of the website to fix things that are wrong.

Council Member Huisking stated that she meant if someone wanted to report a problem. Ms. Hector stated that there is a form to be filled out and those are generally public works problems and they go right to the Public Works Department. There are also links to the My Sierra Vista App and she encourages people to use it.

Council Member Huisking added to definitely change the font.

E. Report on Recent Trips, Meetings and Future Meetings

Mayor Mueller asked Council Members to have their City Manager evaluations done by the week of October 10th as he plans to meet with the Clerk to set up a date after that to hold a meeting.

Mayor Mueller also announced that there is a Special Meeting on September 22nd at 3:00 p.m.

F. Future Discussion Items and Council Requests

Council Member Ash stated that it might be premature but she is hoping to get in the near future a work session item on body cameras, the progress that has been made, how the City got there and going forward. Mayor Mueller agreed and asked Mr. Potucek for an update on body cameras in the near future as to where the City stands.

Council Member Mount reported that at the last Airport Commission Meeting, Ms. McFarland briefed the Commission regarding grants that are coming forward and he believes that it would be interesting for the rest of Council to hear as it pertains to economic development and the efforts going on with the airport. He reported that he let the Commission know about the upcoming commission assessment/evaluation that Council chose to go forward on and they are standing by and ready to assist. In closing, he added that he agrees with a future meeting on body cameras and that he would like for Council to re-evaluate the idea of the trip reports after coming back from a conference. In closing, he noted that it has been several weeks since the last conference and most of Council was there and he would like to know what is going to be done with all of that information that was gathered and how does it get put into a plan to do something with it.

Council Member Ash responded by stating that during the last conference that Council attended, she attended two sessions on body cameras and the information received in those two sessions helped her in asking for the work session item. She believes that it was interesting to see how cities are dealing with the cost issues, how they are deciding on which product to use, managing expectations from the public and how they are doing public outreach in order to manage those expectations about the value of body cameras.


Council Member Calhoun requested an update on the North Garden Avenue, Fry Corridor and beautification that has several different connotations. Mr. Potucek stated that he is working with staff so that there are graphics. The City is currently working on North Garden Avenue Project, which is budgeted. Once, he has a developed a plan for how the City can phase the Fry Boulevard Development in the future and how it can be financed, he will bring it forth to Council in a work session.

Council Member Huisking stated that it is possible for miracles to happen and added that when staff asks Century Link for permission to do the mural on their building, if they would ask them which wall they want it on. If they think that it should be a great big mural maybe they will donate what is needed to do it. Mayor Mueller stated that it does not necessarily have to take up the entire wall as it could be the same size on the south wall as the west wall; but it depends on the placement of trees and there are options to look at. Mr. Potucek added that Council might want to think of the lot next to the building as it could be developed.

Mr. McLachlan stated that he has an answer to the ownership question. In 2000 the City's owner occupied housing rate was 52.2 percent and it actually picked up over the last 10 years to 53.7 percent. Nationally the all time high was in the fourth quarter of 2004 at 69.2 percent and as of the second quarter of this year the national rate is 62.5 percent, about 2/3. The City is below the national average but it did increase a little over the last 10 years.

3. Adjourn

Mayor Mueller adjourned the work session at 4:35 p.m.



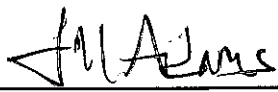
Mayor Frederick W. Mueller

Minutes prepared by:



Maria G. Marsh, Deputy Clerk

Attest:



Jill Adams, City Clerk



**Sierra Vista City Council
Meeting Agenda
September 22, 2016**

Call to Order

5:00 p.m., City Hall Council Chambers, 1011 N. Coronado Drive, Sierra Vista, Arizona

Roll Call

Invocation

Pledge of Allegiance

Item 1 Acceptance of the Agenda

Awards and Presentations

Proclamation declaring October 9 through 15, 2016 as Fire Prevention Week

Proclamation declaring September 26 through October 2, 2016 as Diaper Need Awareness Week

Savvy Award for the Sierra Vista Selfie Sunglasses and Selfie Sunglasses campaign in the category "Marketing Tools – Best Use of a Promotional Item"

Silver Circle Award for the Sierra Vista Economic Development Employee Attraction Video, population category 41,000-55,000

Sierra Vista City Council Businesses of the Month for July – The Confident Brewer

Presentation and announcement of Mural Selection

City Manager's Report: Upcoming Meetings, Bid Openings and Bid Awards

Public Hearing

Item 2 Resolution 2016-076, application for a new license, Series 12, Individual-type of ownership for Oleg Ivanovich Murashka for Z's Steakhouse, 3637 S. Highway 92, Sierra Vista, Arizona

Item 3 Resolution 2016-077, Opening a Public Hearing and Approving the Submission of the US Housing and Urban Development (HUD) Consolidated Annual Performance Evaluation Report (CAPER) for the CDBG Program Years 1 (2014 funding) and 2 (2015 funding)

For special needs and accommodations, please contact Jenifer Thornton, Management Analyst, Department of Community Development, 72 hours prior to the meeting or activity. Ms. Thornton can be reached at (520) 458-3315 or through the Arizona Relay Service at 1-800-367-8939, or by simply dialing 7-1-1.

New Business

Item 4 Resolution 2016-078, Modification Agreement and Estoppel Certificate related to Coronado Commons subdivision Development Agreement

Item 5 Resolution 2016-079, Intergovernmental Agreement with Cochise County Community College District for a Joint Program to train Emergency Medical Services and Fire Science Students

Item 6 Approval of the City Council Meeting Minutes of September 8, 2016

Item 7 Approval of the City Council Special Meeting Minutes of September 12, 2016

Item 8 Resolution 2016-080, Reappointment of Larry Hampton to the Parks and Recreation Commission, said term to expire November 20, 2018

Call to the Public

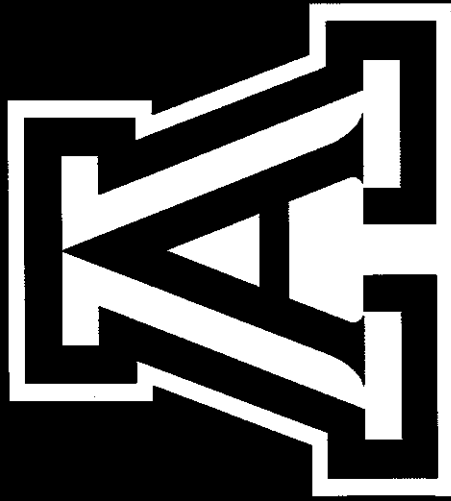
Comments and Requests of the Council

Adjournment

For special needs and accommodations, please contact Jenifer Thornton, Management Analyst, Department of Community Development, 72 hours prior to the meeting or activity. Ms. Thornton can be reached at (520) 458-3315 or through the Arizona Relay Service at 1-800-367-8939, or by simply dialing 7-1-1.

UNIVERSITY OF ARIZONA SOUTH

Cyber Virtual Learning Environment



CYBER OPERATIONS PROGRAM

UA Virtual Learning Environment vs. Cyber Range

University of Arizona Virtual Learning Environment
was Developed to Support The University of Arizona
Cyber Operations Degree Program



- Courses & Labs Backward Engineered to Conform with NSA Academic Requirements
- Designed to Demonstrate and Validate Student Knowledge, Skills & Abilities
- Architected to Support Face-to-Face, Hybrid & Online Learning Modalities
- Mixture of Physical and Cloud Resources

Cyber Operations Courses

BAS CORE COURSES

- ENGV 308 - Technical Writing
- CYBV 326 - Introductory Methods of Network Analysis
- CYBV 329 - Cyber Law, Ethics & Policy
- BSV 376 - Cryptology & Security Mathematics
- INTV 320 - Computational Thinking & Doing

CYBER OPERATIONS SPECIFIC COURSES

- CYBV 385 - Introduction to Cyber Operations
- CYBV 388 - Cyber Investigations & Forensics
- CYBV 389 - Cyber Reconnaissance
- NETV 379 - Cloud Computing
- CYBV 389 - Operating System Theory for Security Professionals
- CYBV 435 - Cyber Threat Intelligence
- CYBV 454 - Malware Threats & Analysis
- CYBV 470 - C Programming for Security Professionals
- CYBV 471 - Assembly Programming for Security Professionals
- CYBV 475 - Network & Vulnerability Scanning
- CYBV 477 - Advanced Cyber Forensics
- CYBV 478 - Social Engineering Attacks & Defenses
- CYBV 479 - Wireless Networking & Security
- CYBV 480 - Cyber Warfare
- CYBV 498 - Cyber Operations Senior Capstone

NSA Requirements

Driven by NSA Cyber Operations Requirements

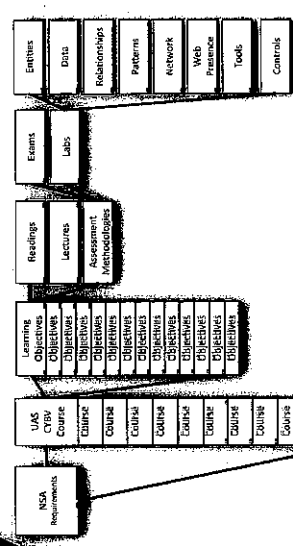
Mandatory Content Areas

- Low Level Programming
- Software Reverse Engineering
- Operating System Theory
- Networking
- Cellular & Mobile Technologies
- Discrete Math & Algorithms
- Cyber Defense
- Security Fundamental Principles
- Vulnerabilities
- Legal, Ethics & Policy

Optional Content Areas

- Wireless Security
- Virtualization Technologies
- Risk Management of Information Systems
- Software Security Analysis
- Secure Software Development
- Forensics & Incident Response
- Applied Cryptology
- HCI/Usable Security
- Offensive Cyber Operations
- Cloud Security

Development Process

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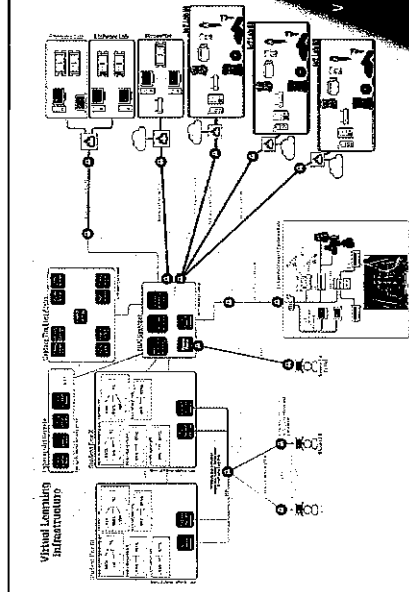
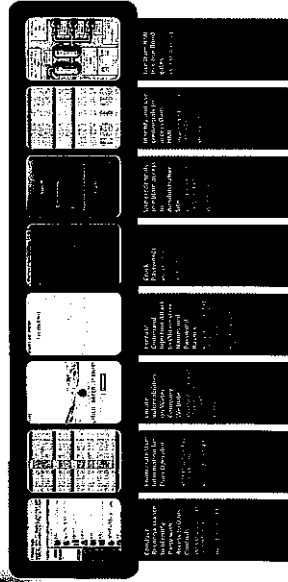
Development Process

**Course Content Developed to Meet Requirements
and Support All Three Learning Modalities**

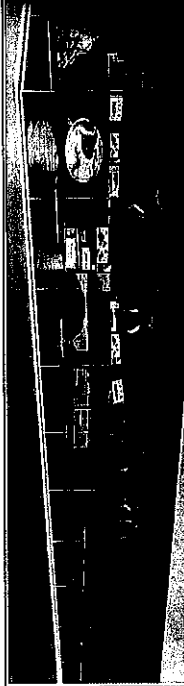
- | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • Evaluated Mandatory & Optional Content Areas • Identified Sub-Content & Outcome Requirements • Aligned Outcome & Requirements to UAS Cyber Operations Program Objectives | <ul style="list-style-type: none"> • Developed Cyber Operations Course Framework • Developed & Linked Individual Course Learning Objectives • Developed Instructional Materials & Lab Requirements | <ul style="list-style-type: none"> • Backward Engineered Virtual Environment Data, Entry & Architectures to support the Learning Objectives • Developed Assessment Methodologies that Accurately Measure Student Performance in Meeting Learning Objectives |
| NSA CSE-CDO Requirements | BAS Degree | Learning Environment |

Learning Thread

Learning Threads are reverse engineered to ensure students perform the tasks necessary to demonstrate they have the requisite knowledge, skills and abilities to meet the specific Learning Objectives



VIRTUAL LEARNING ENVIRONMENT Architecture



Faculty Portal

- Single Point of Entry for Faculty - In Person or Remote Access
- Launch Learning sessions
- Monitor learning sessions
- Request learning sessions
- Register students & provide access
- 1-click learning resource needs

Virtual Learning Environment Status Tracker

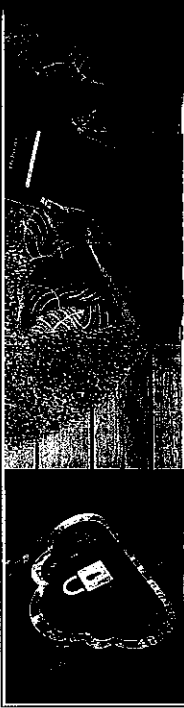
- Services: Usage, Network Bandwidth Usage
- Active Student Locations

Capture The Flag Arena Dashboard

- Team Scores
- Castle Defense/Compassion Status
- Event Timing
- CTF Administrative Controls

VIRTUAL LEARNING ENVIRONMENT

Network Operations Center



Virtual Desktop

- Negates the need for students, classrooms or professors to invest in high performance computer systems
- Provides a consistent student experience across all three learning modalities
- Implemented with multi-factor authentication and encrypted communications to ensure security
- Pre-loaded with a fully tested software baseline that provides consistent learning experience (no version compatibility issues)

VIRTUAL LEARNING ENVIRONMENT

Student Portal

CyberApolis

[illegible]

CyberApolis

3D GUI with Network Attack Map

Power Company

Hospital

Bank

Social Park

1992

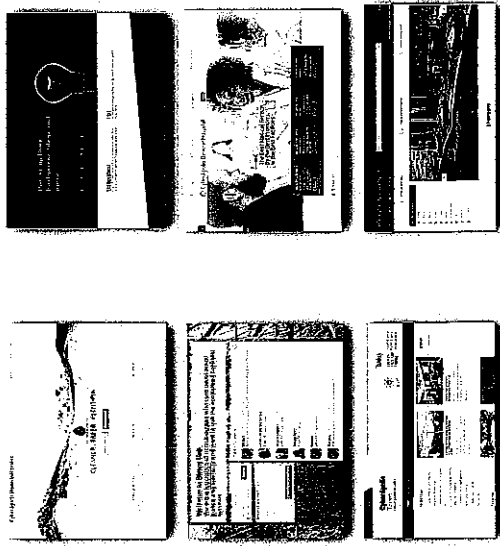
The City of Cyberpolls

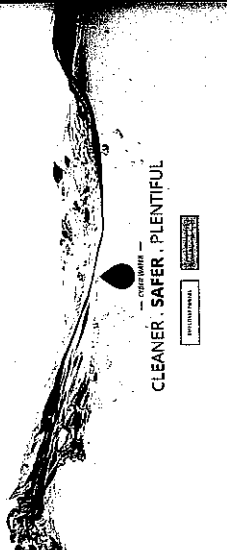
Cosmic Crisp
We-Got You Covered Fine Apparel!

For more information, call 1-800-828-8888.

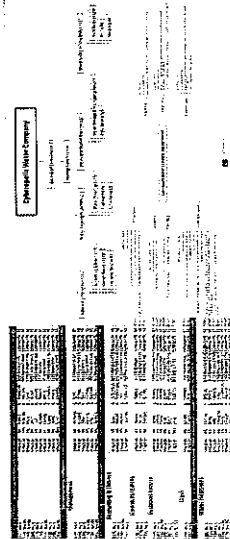
University of Cyberopolis
Cybernetic Telematics & ISP

12345678910111213141516171819202122232425262728293031323334353637383940414243444546474849505152535455565758596061626364656667686970717273747576777879808182838485868788899091929394959697989910010110210310410510610710810911011111211311411511611711811912012112212312412512612712812913013113213313413513613713813914014114214314414514614714814915015115215315415515615715815916016116216316416516616716816917017117217317417517617717817918018118218318418518618718818919019119219319419519619719819920020120220320420520620720820921021121221321421521621721821922022122222322422522622722822923023123223323423523623723823924024124224324424524624724824925025125225325425525625725825926026126226326426526626726826927027127227327427527627727827928028128228328428528628728828929029129229329429529629729829930030130230330430530630730830931031131231331431531631731831932032132232332432532632732832933033133233333433533633733833934034134234334434534634734834935035135235335435535635735835936036136236336436536636736836937037137237337437537637737837938038138238338438538638738838939039139239339439539639739839940040140240340440540640740840941041141241341441541641741841942042142242342442542642742842943043143243343443543643743843944044144244344444544644744844945045145245345445545645745845946046146246346446546646746846947047147247347447547647747847948048148248348448548648748848949049149249349449549649749849950050150250350450550650750850951051151251351451551651751851952052152252352452552652752852953053153253353453553653753853954054154254354454554654754854955055155255355455555655755855956056156256356456556656756856957057157257357457557657757857958058158258358458558658758858959059159259359459559659759859960060160260360460560660760860961061161261361461561661761861962062162262362462562662762862963063163263363463563663763863964064164264364464564664764864965065165265365465565665765865966066166266366466566666766866967067167267367467567667767867968068168268368468568668768868969069169269369469569669769869970070170270370470570670770870971071171271371471571671771871972072172272372472572672772872973073173273373473573673773873974074174274374474574674774874975075175275375475575675775875976076176276376476576676776876977077177277377477577677777877978078178278378478578678778878979079179279379479579679779879980080180280380480580680780880981081181281381481581681781881982082182282382482582682782882983083183283383483583683783883984084184284384484584684784884985085185285385485585685785885986086186286386486586686786886987087187287387487587687787887988088188288388488588688788888989089189289389489589689789889990090190290390490590690790890991091191291391491591691791891992092192292392492592692792892993093193293393493593693793893994094194294394494594694794894995095195295395495595695795895996096196296396496596696796896997097197297397497597697797897998098198298398498598698798898999099199299399499599699799899910001001100210031004100510061007100810091010101110121013101410151016101710181019102010211022102310241025102610271028102910301031103210331034103510361037103810391040104110421043104410451046104710481049105010511052105310541055105610571058105910601061106210631064106510661067106810691070107110721073107410751076107710781079108010811082108310841085108610871088108910901091109210931094109510961097109810991100110111021103110411051106110711081109111011111112111311141115111611171118111911201121112211231124112511261127112811291130113111321133113411351136113711381139114011411142114311441145114611471148114911501151115211531154115511561157115811591160116111621163116411651166116711681169117011711172117311741175117611771178117911801181118211831184118511861187118811891190119111921193119411951196119711981199120012011202120312041205120612071208120912101211121212131214121512161217121812191220122112221223122412251226122712281229123012311232123312341235123612371238123912401241124212431244124512461247124812491250125112521253125412551256125712581259126012611262126312641265126612671268126912701271127212731274127512761277127812791280128112821283128412851286128712881289129012911292129312941295129612971298129913001



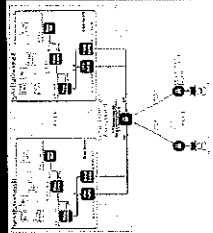


CLEANER · SAFER · PLENTIFUL



Water Company

- Organizational Structure tied to Website & Network
- 136 Detailed Employees (Future Scenario Growth)
- Critical Personas with Links and Patterns of Activity
- Corporate Data & Metadata to Support Scenarios
- Security Vulnerabilities Built into Website & Network
- Full Network Architecture Implemented in the Cloud



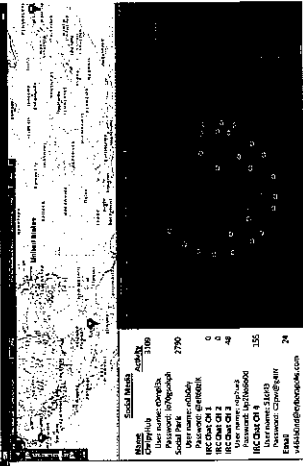
Virtual Personas

- 100+ Highly Detailed Personas
- Designed to Support Learning Threat Scenarios
- Critical Personas with Links and Patterns of Activity
- Personal Data & Metadata to Support Scenarios
- PII, PHI and Financial Data Integrated into Forensics Lab
- Financial Bank, Social Media, Customer Accounts

Virtual Personas Customized to Meet Learning Objectives



Personal Information
 Name: John Doe
 Address: 1234 Main Street
 City: Springfield, IL 62769
 Phone: (555) 555-1234
 SSN: 123-45-6789
 Age: 34
 Blood Type: O+
 Weight: 180 lbs
 Height: 5'10"
 Eyes: Blue
 Hair: Brown
 Marital Status: Single
 Religion: Catholic
 Education: Bachelor's Degree
 Occupation: Software Engineer
 Languages: English, Spanish
 Hobbies: Reading, Hiking, Gardening
 Pets: Dog (Golden Retriever)
 Vehicles: 2015 Ford F-150
 Credit Cards: Visa, Mastercard
 Bank Accounts: Chase, Wells Fargo
 Insurance: Auto, Life, Health
 Social Media: Facebook, Twitter, LinkedIn
 Email: john.doe@example.com
 Password: SecurePass123!



Large Retailer

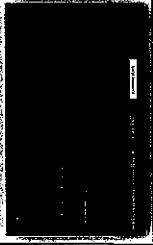
- 7800 Operational Customer Accounts
- Sign On Credentials
- PII Data - Name, Address, Phone, Email
- CC#, Expiration date, Security Code, Customer Numbers
- Future Integration of POS Devices

Hospital

- Operational Patient Accounts
- Sign On Credentials
- 105 Patient Records
- PHI & PII Data
- Future Integration of Medical Devices

Bank

- 9600 Operational Customer Accounts
- Sign On Credentials
- Financial Data - Routing Number, Checking, Savings, CC#, Balances, & PII data
- Future integration of ATMs



VIRTUAL LEARNING ENVIRONMENT

Forensics Lab

Virtual Desktop with Analysis Tools

Pre-Configured/Compromised Victim Machines

Relevant Learning Objectives

S.M. Abdalrhman & J. Ward

Trade Policies & Effects

Incident Response Procedures

Anomaly & Intrusion Detection

C2 Operations & Data Exfiltration Detection

Registry/Configuration File Analysis

Future Enhancements

Industrial Control System (ICS) Forensics

Internet of Things (IoT) Forensics

Mobile Device Forensics

VIRTUAL LEARNING ENVIRONMENT

Malware Sandbox

Logically Separated from other components

Virtual Desktop with Analysis Tools

Five Malware Samples

Anti-Virus Fundamentals with Hands-On Lab

amorphous

Supplément aux pages 1-68

Summary Analysis with Hands-On Labs

Validation & Sensitivity Analysis Experiments

Mihir Goveas Engineering

Static Analysis

Παναγιώτης Γεωργιάδης

Dynamic Analysis

Document Shellcode for VM Analysis



VIRTUAL LEARNING ENVIRONMENT

Capture the Flag Arena

Force on Force Cyber Exercise

Hosts 2-4 teams

In Person and/or Virtual

Virtual Desktops

Preconfigured Tools

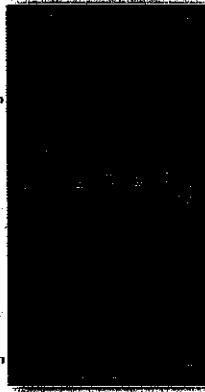
Windows and Linux Castles

Support Differing Skill Levels

Overt & Covert Live Leader Board

Recorded Sessions

Beginner/Intermediate/Advanced Configurations



VIRTUAL LEARNING ENVIRONMENT

Internet of Things (IoT) Lab

Internet of Things (IoT) Lab Details

25 Billion Connected Internet of Things - 50 Billion by 2025

Over 70% of Devices have No Security & Unencrypted Comms

Leveraged by Student Interns to Gain Real World Experience

Data Captured Daily and Made Available to UA Researchers

Research Areas

Security

Network, Device & Physical Security

Information Leakage

Network Traffic Intercepts & Externals

Radio Frequency

RF Noise & Interference

Network Loading

Power & Thermal

Power Consumption & Management

Thermal Radiation & Management

Interoperability & Human Factors

Device Inoperability

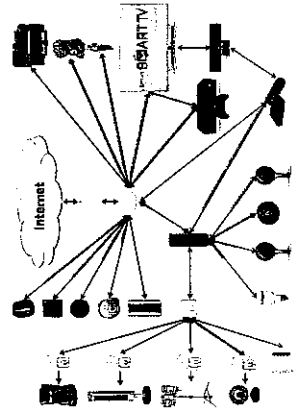
Human Factors Analysis

Accessibility, Strengths & Limitations

Advanced Data Analytics & Privacy Management

Activity, Audio & Video Monitoring & Analysis

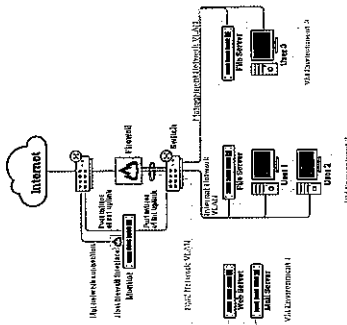
Sensor Data Monitoring & Analysis



Intellectual Property Law Firm Honeynet
Linked to Cyberpolis 3D GUI & Attack Map
Leveraged by Student Interns to Gain Real World Experience
Data Captured Daily and Made Available to UA Researchers

Active Cyber Defense Activities

- Active Cyber Defense Activities:
Network Security Monitoring
Incident Response
Cyber Threat Intelligence Production
Threat & Environment Manipulation
Vulnerability Scanning
Security Protocol Compliance
Defensible Architecture Research
Virtualization Techniques



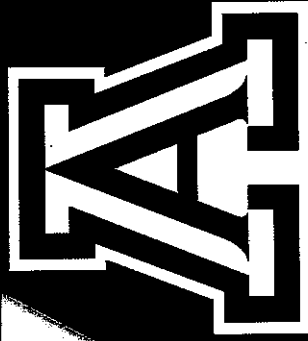
- Available within UA Courses or as Separate Instructional Components
- Mapped to NSA Knowledge Units & UA Course Learning Objectives
- Support Face-to-Face, Synchronous and/or Asynchronous Delivery
- University of Arizona Completion Certificates
- Continuing Professional Education (CPE) Credits*

Contact us for Further Information & Scheduling

Modular By Design

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Questions



VIRTUAL LEARNING ENVIRONMENT

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